

## RESPONSE TO COMMENTS

City and Borough of Juneau, Mendenhall WWTP

NPDES Permit No.: AK-002295-1

The draft permit and public notice for the City and Borough of Juneau (CBJ), Mendenhall Wastewater Treatment Plant was published on August 18, 2000. The public notice comment period ended on September 18, 2000. Comments were received from the CBJ and the US Fish and Wildlife Service (USFWS). This document summarizes and responds to those comments.

### 1. Comment

The draft permit proposes a flow limit of 4.9 mgd, a change from the existing permit which does not have a flow limit. The hydraulic capacity of the plant is approximately 8 mgd and there are a number of occasions during wet weather when flow exceeds 4.9 mgd. These flows only occur when the Mendenhall River flow is very high and there is much dilution available. The City requests that the flow limit be removed.

### Response

Historically, the purpose of the flow limit, which has been required by Alaska Department of Environmental Conservation (ADEC), has been to insure that mixing zone authorized by the State is appropriate. After discussion with ADEC, and based on their certification, EPA has revised the permit to require a daily maximum flow limit of 4.9 MGD during periods of low river flow.

Further, to insure that the mixing zone granted is appropriate and to help determine plant treatment capacity, the following changes were made to the draft permit. The permit has been revised to include the following requirements:

- ▶ calculate dilution daily and report the monthly minimum dilution;
- ▶ set the allowable minimum dilution at 10:1 based upon a dry weather design flow of 4.9 MGD; and
- ▶ monitor for flow and all the parameters with permit limits in Table I.B.1. whenever effluent flow is greater than 4.9 MGD.

In addition, the State is requiring that the City develop and complete a study of current plant capability within one year of the effective date of the permit.

### 2. Comment

It is unclear whether fecal coliform values should be reported as a geometric or as an arithmetic mean. The City believes that the weekly average and monthly average fecal

coliform limits are to be calculated as geometric means. The permit language should be revised to clarify the issue.

**Response**

EPA agrees. The permit has been revised to specify that fecal coliform limits are to be calculated as geometric means.

3. **Comment**

Footnote 3 of the Fecal Coliform effluent characteristic states “No more than 10 percent of the values may exceed a daily maximum value of 400 FC/100ml.” No time period is indicated for this requirement. The permit should be revised to include the time period, which we believe is one calendar month.

**Response**

The permit has been revised to add “within a calendar month” to Footnote 3.

4. **Comment**

**Sampling Frequencies**

Fecal coliform. The sampling frequency for fecal coliform should be reduced to once per week, to match the sampling frequency of the other conventional parameters (BOD, TSS). The City suggests including a requirement that sampling frequency will increase if a sample is found to exceed the daily maximum, until such time as the daily maximum is no longer exceeded. For example, sampling frequency might increase to two or three times per week until such time as the reason for the high coliform value has been discovered, the problem solved, and the values returned to below the daily maximum.

Total Ammonia. The draft permit requires that total ammonia as nitrogen be sampled weekly, while the existing permit only requires monthly sampling. Since it appears that the WWTP will be able to meet the new ammonia limits, the City requests that sampling be reduced to monthly.

Turbidity. The permit proposes quarterly monitoring for turbidity without specifying a sample type. The Mendenhall WWTP continuously monitors turbidity in the effluent. It seems this information would be more useful than a quarterly grab sample.

Cyanide. Part I.B.1. requires that cyanide be sampled per the frequency specified in Part I.D.3. of the permit, which is the pretreatment section. A number of parameters are

required to be sampled under I.D.3., some of which are in Part I.B.1. and some of which are not. The commenter suggested that the reference in Part I.B.1. be deleted for the sake of consistency.

Copper, lead, silver, zinc, hardness and alkalinity. Monthly monitoring for these parameters are a significant expense. The requests that the frequency be reduced to quarterly.

Whole effluent toxicity (WET) testing. The draft permit requires twice-yearly sampling for WET testing. The City requests that the frequency be reduced to once per year. The WET test is very costly.

## **Response**

Fecal coliform. EPA has evaluated the past compliance monitoring data for fecal coliform from the Juneau Mendenhall Wastewater Treatment Facility. Based on that analysis, EPA has concluded that monitoring frequency cannot be reduced to once per week. Due to the City's past history of fecal coliform violations, fecal coliform monitoring will be required three times per week. Fecal coliform violations can present a serious public health risk. This increased monitoring is needed to increase the likelihood that fecal coliform violations are detected as they occur.

In addition, the Juneau Mendenhall Wastewater Treatment Plant has experienced fecal coliform violations associated with high flows on numerous occasions within the past three years. On multiple occasions, fecal coliform violations were reported, and it was noted on the discharge monitoring report that these violations were a consequence of high flows. Provisions in the permit have been added to monitor for fecal coliform, in addition to several other parameters, when flow is greater than 4.9 MGD. These monitoring requirements are needed to ensure that sampling is occurring during high flow periods as well as under other operating conditions. This additional monitoring will result in representative sampling that will determine whether a correlation exists between high flows and fecal coliform violations so that proper measures can be taken by the City to address this treatment problem.

The City's proposal that monitoring be increased if the daily maximum is exceeded can be done at the City's discretion. However, if a daily maximum is exceeded, that is a violation of the permit limit. If one sample is taken and the weekly average is exceeded, then taking more samples does give the City an opportunity to reduce the chance of incurring a permit violation for the weekly average limitation.

Total Ammonia. After reviewing the available data, EPA agrees that continuing monthly monitoring for ammonia from the existing permit is appropriate. The final permit has

been revised to require monthly monitoring instead of weekly monitoring for total ammonia.

Turbidity. EPA agrees and has revised the permit to require continuous monitoring for turbidity.

Cyanide. After re-evaluating cyanide results based upon a new dilution allowed by the State, there no longer exists reasonable potential for the discharge of cyanide to cause or contribute to an exceedance of the criteria. Monitoring for cyanide will only be required as part of the pretreatment requirements.

Copper, lead, silver, zinc, hardness, and alkalinity. EPA agrees that the existing permit only required quarterly monitoring for these parameters. However, analysis of the results showed that permit limits are needed for those metals. Monthly monitoring through the first permit cycle when limits are imposed is a minimum requirement. Under Agency monitoring frequency reduction guidance, facilities are not eligible for a reduction in frequency during the first permit cycle.

WET testing. During the comment period, USFWS expressed concerns about the potential toxicity of the discharge, since the mixing zone extends through 70 percent of the Mendenhall State Refuge boundaries. EPA believes that requiring WET testing twice a year is reasonable to help ensure protection of the State Refuge. The permit will not be revised to reduce the frequency of WET test monitoring.

#### 5. **Comment**

The way that receiving water monitoring is presented in the permit is confusing. One of the reasons is that the table in I.C.2. describes effluent sample types, but not receiving water sample types. Also, Part I.C.5. is confusing with regard how to fecal coliform samples should be collected and the determination made. It would be helpful if the permit language were revised to include one paragraph which describes the fecal coliform sampling and a separate paragraph which describes the sampling for the other parameters.

#### **Response**

EPA agrees. The permit has been revised to include sample type for receiving water monitoring in the table in I.C.2., and to add a paragraph which describes only the fecal coliform monitoring.

**6. Comment**

Part I.D.3. of the draft permit requires that influent, effluent and sludge be sampled and analyzed for total toxic organics. The collection system for the Mendenhall WWTP does not include commercial and industrial enterprises that might be expected to discharge significant quantities of toxic organics. The city requests that this requirement be removed from the permit.

**Response**

While the City may believe that there is no reason to expect any significant amounts of toxic organics, collecting at least one set of samples would help to confirm the City's belief. The permit only requires this sampling once during the life of the permit. EPA does not believe this represents an unduly burdensome requirement. Accordingly, the permit requirement for total toxics organics is not being removed. Instead, the permit has been revised to change the timing of the collection of samples for total toxic organics to coincide with when the progress report of the Industrial User Survey is due. If total toxic organics are shown to be present, then the City would have six months to begin searching for the sources.

**7. Comment**

The draft permit requires a number of reports, studies, study plans, and other documents to be prepared. Some of the items have deadlines for submittal. While some of the reports are relatively straightforward and meeting the specified deadlines should not present a problem. It would be more effective to include the entire community in the Industrial Users Survey, rather than just the collection system for the Mendenhall plant. Since doing so will require a contractor and appropriation of funds for the task, the City requests that the deadlines be extended by one year. The other project which is anticipated to need more time is the review of the plant's operations and maintenance plan. This plan has not been updated since the development of the original operations manual for the plant. The City requests that the deadline for this project also be extended for one year after the effective date of the permit.

**Response**

EPA believes that extending the deadlines are appropriate and needed in order to develop and adequate User Survey. The User Survey must include sufficient informant that EPA can use to evaluate whether or not the City and Borough of Juneau should develop and implement a pretreatment program. The permit has been revised to extend the deadlines to complete the Industrial Users Survey and the review of the plant's operations and maintenance plan.

**8. Comment**

The Mendenhall Wastewater Treatment Facility flows into the Mendenhall River, part of the Mendenhall State Refuge. The mixing zone for the facility is approximately 70 percent within Refuge boundaries. We believe that there should be no effluent toxicity to any organisms in the river. There have been past Mendenhall WWTF upsets which have sent untreated sewage into the river. If toxicity tests had been conducted during this period, it is likely that toxicity would have been found.

**Response**

Since no samples were collected during those upsets and analyzed for whole effluent toxicity, it is not possible to say definitively whether or not there was toxicity present. To address concerns about toxicity in the Refuge, the current WET testing frequency has been retained in the final permit.

**9. Comment**

The geology of this area is heavily mineralized and it is unlikely that background concentrations of metals such as nickel, copper, silver and zinc would be at zero concentrations. We recommend that baseline data be collected for a calendar year before any mixing zone calculations are completed.

**Response**

While EPA agrees that given the geology of the area, there may be background concentrations of these metals, there is not any data available. For that reason, we used a default of zero for background concentrations when calculating the need for and developing any metals limits. In addition, the permit requires that the CBJ conduct ambient metals monitoring quarterly monitoring until 12 samples have been collected and analyzed. The results of that monitoring will be used in any future mixing zones developed for this discharge.

**10. Comment**

There are no baseline temperature records for the Mendenhall River. Some researchers believe that the Mendenhall WWTF effluent is already creating warmer river temperatures near the outfall that are attracting hatchery salmon versus native salmon. We recommend that baseline temperature records for the Mendenhall River be collected for a calendar year and that based on those data, permit temperature limits must be established.

**Response**

The permit does require that a temperature baseline for the Mendenhall River be established. Regulations at 40 CFR § 122.62 allow permits to be modified if cause exists. If the results of the temperature sampling indicate that the discharge from the Mendenhall WWTF is causing or contributing to an exceedance of the temperature water quality standard, the permit can be modified to include temperature limits.

**Other Changes**

The language in Part II.A.1., "Representative Sampling," was updated to the most current language. Specifically, it requires the permittee to collect additional samples whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample. The permittee shall analyze the additional samples for those parameters limited in Part I.A. of the permit that are likely to be affected by the discharge. In addition, the permittee shall collect such additional samples as soon as the spill, discharge, or bypassed effluent reaches the receiving waters.

Based upon further review of compliance data for the Juneau Mendenhall WWTP, EPA added requirements and conditions to the permit to address sanitary sewer overflows. Sanitary sewer overflows are overflows, spills, releases, or diversions of wastewater from a sanitary sewer system. Sanitary sewer overflows do not include combined sewer overflows (CSOs) or other discharges from the combined portions of a combined sewer system.

**State Certification**

On January 8, 2001, the Alaska Department of Environmental Conservation (ADEC) issued a final certificate of reasonable assurance for the Juneau Mendenhall WWTF NPDES permit. This certification established the following:

- ! a daily maximum flow limit of 4.9 MGD during low river flow;
- ! a mixing zone achieving a minimum dilution of 10:1;
- ! fecal coliform limits of a monthly average of 200 per 100 ml, a weekly average of 400 per 100 ml, and a daily maximum of 400 per 100 ml;
- ! all ambient monitoring shall be performed just prior to low tide;
- ! a study of current plant capacity to be completed within one year of the effective date of the permit;
- ! a sign describing the discharge to be placed near the end of the mixing zone; and
- ! that the diffuser be redesigned to maximize available dilution.

These requirements have been incorporated into the final permit.

